



Children need music

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Abstract

Neurobiological and anthropological reasons call for high-priority attention to the human need for music as a rhythmically organized sound experience and an expressive tool for communication. Every human being is born with a certain level of musical potential. The most powerful neural networks and behavioural attitudes are developed during childhood. Therefore, music education plays an essential role in developing and consolidating this given potential.

Key words

anthropology, music aptitude, music education, neurobiology, neuro-didactics

From a neurobiological point of view, the early years of childhood are crucial for the development of synaptic connections in the brain. This is reflected in simple terms by the German proverb 'Was Hänschen nicht lernt, lernt Hans nimmermehr' ('what Johnny doesn't learn, John won't learn any more').

However, we must not overestimate the first years (as John Bruer has mentioned in his book *The Myth of the First Three Years*, 1999). It is not that Johnny stops learning at an older age. Humans never finish their learning process. It is impossible to abstain from learning (we cannot not learn) because of the structural plasticity of the brain. However, it is much easier to learn during the flexible developmental phase of the brain. Therefore, the most important faculties (such as upright position, verbal speech, logical thinking, abstract formal operations, etc.) are developed during the first years of life.

Learning is based upon the plasticity of the brain, which is most powerful in the early years, but continues over the entire life span. From a human, neurobiological, educational and ethical perspective, early childhood education is important. Families and pre-school institutions (kindergartens) are the first and most crucial agents to present a stimulating, enriched environment for learning.

Brain development is basically determined by genetic disposition, but the brain's individual structure depends on use. The brain develops according to how we use it. All experiences are stored in the brain and influence its neural structure.

Recent findings in animal research have demonstrated that emotional deprivation and loss of social contact negatively affect the deep structure (limbic system, amygdala) of the

brain. This has promoted 'neuro-didactics' because of the obvious impact of neurobiological processes on teaching and learning. Afflictions such as hyperactivity disorder and attention deficit syndrome (ADS) refer to a possible interaction between emotional care and brain development.

This supports the social and educational demand on policy makers to strengthen the role of families in terms of education so that they can offer the best possible learning environment for infants. Pre-schools and schools can only support, but not replace, parental care. Music learning, as any other learning, needs individual social interaction and informal guidance.

Music plays an important role at that early age. In its own unique way, musical practice activates rhythmic processes. The experience of time and space in childhood is different from that of adults. Children explore time and space by body weight and flow of movement, whereas adults count and measure. Therefore, it is obvious and reasonable that children need music as a means of rhythmic repetition and structured movement. And they respond to music with great sensitivity.

Music stimulates the growth of brain structures and connects many activated brain areas. Musical practice calls for fine motor coordination, and enhances the phonological loop. It is not a question of whether music is processed in the right or left brain hemisphere, because music fosters a strong interconnectivity and coherence between both hemispheres. As shown by the treatment of cochlear implant children, music functions as a highly differentiated stimulus for the underdeveloped auditory cortex.

Research on musical aptitude has demonstrated that every human being is born with a certain level of musical potential, which is at its highest degree right after birth and can never exceed this level. Without any informal environmental stimulation, a child's musical potential will decrease and finally disappear. Therefore, it is extremely important to expose the brain to various musical stimuli so that it can develop musical representations. The learning window for the musical brain opens at a very early age. Parents and educators should aim to develop each child's given potential.

Music learning already starts at a pre-natal stage (as Kodály used to say, music education starts nine months prior to the birth – of the mother!) and continues informally after birth, depending on parental musical activities. Children learn music as they do language, i.e. they do not start with grammar and theory, but with practice. They develop *knowing-how* before *knowing-about*. Action knowledge represents the most robust representation of musical knowledge. The vital need for music facilitates learning by practical approaches. Music, then, becomes a natural means of communication and expression.

In view of the above, an international organization such as ISME is extremely important. It shares the responsibility of humans to provide all children with the best possible education corresponding to general human conditions and individual cultural properties. Exchange and interaction of different cultures can be seen as the best way to prevent a clash of cultures and to establish a peaceful symbiosis of people in the global world. The most powerful neural networks and behavioural attitudes are developed during childhood. A general acquisition of knowledge of the surrounding world (which Donata Elschenbroich, 2001, calls 'Weltwissen' and 'Welterfahrung') governs our feelings and thoughts, our practice and knowledge. Music education plays its particular role in children's education. It fulfils an ethical doctrine to develop and consolidate a given potential to the best possible extent.

References

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Abstracts

Les enfants ont besoin de la musique

Des raisons neurobiologiques et anthropologiques réclament un grand intérêt au besoin humain de musique; telle une expérience sonore rythmiquement organisée et un outil expressif pour la communication. Chaque être humain est né avec un certain niveau de potentiel musical. Les plus puissants réseaux neurologiques et les attitudes comportementales sont développés pendant l'enfance. Par conséquent, l'éducation musicale joue un rôle essentiel dans le développement et la consolidation du potentiel donné.

Kinder brauchen Musik!

Neurobiologische und anthropologische Gründe sprechen dafür, dem menschlichen Bedürfnis nach Musik als rhythmisiertem Klang und expressiver Kommunikation in der Erziehung hohe Priorität zukommen zu lassen. Jeder Mensch wird mit einem bestimmten Grad an Begabung geboren. Dauerhafte neuronale Netze und Verhaltensmuster werden in der Kindheit erworben. Daher fällt der Musikerziehung die zentrale Aufgabe zu, das genetisch erworbene Potential bestmöglich zu fördern und nachhaltig zu festigen.

Los niños necesitan música

Razones neurobiológicas y antropológicas demandan una atención prioritaria a la necesidad que tiene el ser humano por la música como experiencia sonora y herramienta expresiva para la comunicación. Todo ser humano nace con un determinado potencial musical. Las redes neuronales más poderosas y las actitudes de conducta se desarrollan durante la infancia. La educación musical juega un papel esencial para consolidar y desarrollar el potencial dado.